

Customer No.: 31561  
Application No.: 10/709,953  
Docket No.: 10546-US-PA

### REMARKS

#### Present Status of the Application

The Office Action rejected claims 1-3, 8-12, and 16-20. Specifically, claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Hashimoto (U. S. Patent 6,583,516). Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Hung (U. S. Patent 6,452,270). Claims 1 to 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Horng (U.S. Pub. 2004/0266163). Claims 8, 9, 11, 12, 16, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang. Claims 3, 8 to 12, and 16 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto. Claims 3, 8 to 12, and 16 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (*note: the Office Action in page 9 rejects claims in view of Hung, but referring to Horng. Applicants take Horng*). Applicants have amended the title. Claims 1-3, 8-12, and 16-20 remain pending in the present application, and reconsideration of those claims is respectfully requested.

#### Discussion of Claim Rejections under 35 USC 102

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Hashimoto (U. S. Patent 6,583,516). Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Hung (U. S. Patent 6,452,270). Claims 1 to 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Horng. Applicants respectfully traverse the rejections for at least the reasons set forth below.

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1. In present invention, FIG. 2 discloses the features as recited in independent claim 1 as follows:

*Claim 1. A chip packaging structure, comprising:  
a chip having a first passivation layer and at least a bonding pad, wherein the bonding pad is exposed by the first passivation layer and the first passivation layer has at least a recess;  
a redistribution layer formed over the first passivation layer, wherein the redistribution layer electrically connects with the bonding pad and extends from the bonding pad to the recess;  
a second passivation layer formed over the first passivation layer and the redistribution layer, wherein the second passivation layer has an opening that exposes the redistribution layer above the recess; and  
at least a bump disposed inside the opening and electrically connected to the redistribution layer above the recess. (Emphasis added)*

In FIG. 2 as the example, the first passivation layer 214 exposes the bonding pad 216 and *has the recess 218*. Then, the redistribution layer 220 is formed over the exposed bonding pad 216 and the first passivation layer 214, including covering over the recess 218.

2. In re Hashimoto, as shown in Fig. 10C, Applicants respectfully disagree that the Office Action refers to intermediate layer 108 as the first passivation layer of the claimed invention.

Hashimoto clearly discloses that the passivation layer 106 is formed on the active surface 102a avoiding an electrode 104 (col. 12, lines 25-27). *In other words, the electrode 104 is exposed by the passivation layer 106, which is to be compared with the first passivation layer 214 of the present invention.* Clearly, the passivation layer 106 of Hashimoto does not have the recess.

The conductive covering layer 118 (col. 12, lines 42-43), which may be considered as the

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redistribution layer, is the formed on the passivation layer 106. This does not equally disclose the features as recited in independent claim 1.

Further, Applicants respectfully states that the wire 110 (col. 12, line 46) has been improperly considered to be the redistribution layer by the Office Action.

Therefore, independent claim 1 is not equally disclosed by Hashimoto. With at least the same reasons claim 2 is not disclosed by Hashimoto.

3. In re Huang, as shown in Fig. 8, the passivation layer 330 has been referred by the Office Action to provide the first passivation layer 214 of the claimed invention. However, Applicants respectfully disagree.

In Fig. 8, clearly, the passivation layer 330 exposes the bonding pad 320 *but does not have the recess at all.* The multi-layered lead 440 has been considered to be the redistribution layer. However, this multi-layered lead 440 is flat under the bump.

Therefore, the passivation layer 330 of Huang does not disclose the first passivation layer 214 with the recess in the present invention. Huang does not disclose the equal features of the present invention.

4. In re Horng, it is believed that Horng *is not qualified as a valid prior art* to the present invention. Horng filed the Application on Jan. 9, 2004 after the priority date Jun. 9, 2003 of the present invention. Also and, Horng is owned by the same Company.

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5. For at least the foregoing reasons, Applicants respectfully submit that independent claim 1 patentably defines over the prior art references, and should be allowed. For at least the same reasons, dependent claims 2 and 3 patentably define over the prior art references as well.

**Discussion of Claim Rejections under 35 USC 103**

Claims 8, 9, 11, 12, 16, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang. Claims 3, 8 to 12, and 16 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto. Claims 3, 8 to 12, and 16 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (As previous statements, *Applicants take Horng instead Hunag*).

With respect to elected dependent claim 3 and 8, the under-bump-metallurgy layer has three layers. In re Huang, the under-bump-metallurgy layer should be the layer 460 with two sub-layers. This situation corresponds to the currently withdrawn claim 4 required by the Office Action for election. Therefore, the under-bump-metallurgy layer with two-layer structure in Huang should be different from the under-bump-metallurgy layer with three-layer structure in the present invention. The Office Action has improperly considered the redistribution layer 440, considered in claim 1, as the under-bump-metallurgy layer of the present invention.

In re Hashimoto, the conductive foil 112 having a hole 112a is not the under-bump-metallurgy layer (col. 12, lines 46-47), and further the conductive foil 112 is a single-layer structure with hole. Conductive foil 112 failed to disclose the

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under-bump-metallurgy layer as recited in claims 3 and 8.

The materials of Cu, Cr, Ti, N, Ti-W, or combination thereof in Hasjimoto (col. 6, lines 55-63) are for the wire 18 but not for the conductive foil.

Hasjimoto further failed to disclose the features as recited in claim 3 and 8.

In re Horng, Horng is not a valid prior art.

6. With at least the foregoing reasons applied to independent claim 1, the prior art references Huang, Hasimoto and Horng do not fully disclose the features as recited in independent claim 1, and therefore do not disclose the features as recited in dependent claims 3, 8-12 and 16-20. Wherein, claims 3 and 8-12 further define over the prior art references.

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**CONCLUSION**

For at least the foregoing reasons, it is believed that all the pending claims 1-3, 8-12, and 16-20 of the invention patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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